

Syllabus

Course Number: CY200

National College

Revised 4-22-13

CY200: Security +

Credit Hours: 4

Prerequisites: ISE205

Course Description

This course provides students with the knowledge and skills necessary to understand the core concepts of computer and network security. This course explains key security concepts including understanding threats to a computing infrastructure, securing a network infrastructure, understanding encryption technologies, securing communication and applications, and responding to security incidents. This course is designed to help prepare students for the CompTIA Security+ Certification Examination.

Instructor Contact Information

Instructor Name	Gerard Arthus
Instructor Email	Garthus801@gmail.com
Instructor Phone	Home 574-217-8726 Cell 631-335-5250

Course Length

The college evaluates each course in terms of quarter hours of credit. One unit of credit is usually equivalent to a minimum of ten academic instruction hours of lecture and examination, twenty hours of skill development, or thirty hours of externship, or a combination of the three. An academic instructional hour is fifty minutes.

This class will meet for the equivalent of a minimum of 55 instructional hours or as otherwise scheduled by the college and at least in conformance with this minimum and the Syllabus. As specified by the Method of Instruction section of this Outline, the instructor will ensure that the total class sessions presented consist of a minimum of 27.5 direct faculty instruction hours and a maximum of 27.5 appropriate classroom activity hours.

All course offerings require outside preparation time, which is approximately two hours per lecture instructional hour and/or one hour per skill development instructional hour, depending on the background, interest, abilities, and motivation of the individual student.

Course Objectives

By the end of this course, you should be able to:

1. Explain the security function and purpose of network devices and technologies.
2. Apply and implement secure network administration principles.
3. Distinguish and differentiate network design elements and compounds.
4. Implement and use common network protocols.
5. Identify commonly used network ports.
6. Implement a wireless network in a secure manner.
7. Explain risk related concepts and carry out appropriate risk mitigation strategies.
8. Execute appropriate incident response procedures.
9. Explain the importance of security related awareness and training.
10. Explain the impact and proper use of environmental controls.
11. Plan, create and execute disaster recovery plans and procedures.
12. Analyze and differentiate among types of malware.
13. Analyze and differentiate among types of system attacks.
14. Analyze and differentiate among types of social engineering attacks.

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15. Analyze and differentiate among types of wireless attacks.
16. Analyze and differentiate among types of application attacks.
17. Analyze and differentiate among types of mitigation and deterrent techniques.
18. Implement assessment tools and techniques to discover security threats and vulnerabilities.
19. Within the realms of vulnerability assessments, explain the proper use of penetration testing versus vulnerability scanning.
20. Explain the importance of application security.
21. Carry out appropriate procedures to establish host security.
22. Explain the importance of data security.
23. Explain the function and purpose of authentication services.
24. Explain the fundamental concepts and best practices related to authentication, authorization and access control.
25. Implement appropriate security controls when performing account management.
26. Summarize general cryptography concepts.
27. Use and apply appropriate cryptographic tools and products.
28. Explain the core concepts of public key infrastructure
29. Implement PKI, certificate management and associated components

Gradebook

A student's performance in this course will be evaluated using a variety of factors listed below. Instructors must use a minimum of three (**homework, tests and a final exam are required**), and it is recommended that instructors use all five of the areas in your evaluation.

The exact weight to be given to any particular area is determined by the instructor and will normally fall within the ranges listed below.

Area	Percentage for this Course	Suggested Range
Final Exam	25%	20 – 25%
Tests	30%	20 – 40%
Homework	15%	10 – 15%
Project/Research Paper	20%	20 – 25%
Class Participation	10%h	10 – 15%
TOTAL	100%	

Letter Grade	Points	Explanation
A	94-100	Excellent

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B	84-93	Above Average
C	74-83	Average
D	64-73	Below Average
F	63 & Below	Failure

Textbook & Instructional Material

Ciampi, Mark. Security+ Guide to Network Security Fundamentals, 4th ed. with Cengage CourseMate, Cengage Publishing

Lab Manual For Security+ Guide to Network Security Fundamentals, Farwood, Dean, Cengage Publishing

LabSim: Security+, TestOut Corporation

The instructor might utilize additional instructional materials as provided by the publisher.

Course Outline

Term: 147

Class Date: Week 1: 08 July 2014 Chapter 1: <i>Introduction to Security</i>	Homework Due Date: <u>By the end of the next week</u>
In Class Activities	Homework
<u>Do all of the Hands-on Labs in this week's chapters.</u> <u>Do the quiz and the discussion forum posted on the Course Web-site for this week.</u> <u>Document and record all work with appropriate screenshots (Using Greenshot screen-capture software; or the Snagit feature in Windows 7) and clear, concise, and understandable wording. Complete these assignments in a tutorial type format as if you were explaining the materials to someone who was unfamiliar with the information.</u>	<u>Do Homework for this week as listed on the Course Web-site for each Chapter in the Assigned Textbook.</u>
Class Date: Week 2: 15 July 2014 Chapter 2: <i>Malware and Social Engineering Attacks</i>	Homework Due Date: <u>By the end of the next week</u>
In Class Activities	Homework

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<p><u>Do all of the Hands-on Labs in this week's chapters.</u></p> <p><u>Do the quiz and the discussion forum posted on the Course Web-site for this week.</u></p> <p><u>Document and record all work with appropriate screenshots (Using Greenshot screen-capture software; or the Snagit feature in Windows 7) and clear, concise, and understandable wording. Complete these assignments in a tutorial type format as if you were explaining the materials to someone who was unfamiliar with the information.</u></p>	<p><u>Do Homework for this week as listed on the Course Web-site for each Chapter in the Assigned Textbook.</u></p>
<p>Class Date: <u>Week 3: 22 July 2014</u> Chapter 3: <i>Application and Network Attacks</i> In Class Activities</p>	<p>Homework Due Date: <u>By the end of the next week</u> Homework</p>
<p><u>Do all of the Hands-on Labs in this week's chapters.</u></p> <p><u>Do the quiz and the discussion forum posted on the Course Web-site for this week.</u></p> <p><u>Document and record all work with appropriate screenshots (Using Greenshot screen-capture software; or the Snagit feature in Windows 7) and clear, concise, and understandable wording. Complete these assignments in a tutorial type format as if you were explaining the materials to someone who was unfamiliar with the information.</u></p>	<p><u>Do Homework for this week as listed on the Course Web-site for each Chapter in the Assigned Textbook.</u></p>
<p>Class Date: <u>Week 4: 29 July 2014</u> Chapter 4: <i>Vulnerability Assessment and Mitigating Attacks</i></p>	<p>Homework Due Date: <u>By the end of the next week</u></p>

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<p>In Class Activities</p> <p><u>Do all of the Hands-on Labs in this week's chapters.</u></p> <p><u>Do the quiz and the discussion forum posted on the Course Web-site for this week.</u></p> <p><u>Document and record all work with appropriate screenshots (Using Greenshot screen-capture software; or the Snagit feature in Windows 7) and clear, concise, and understandable wording. Complete these assignments in a tutorial type format as if you were explaining the materials to someone who was unfamiliar with the information.</u></p>	<p>Homework</p> <p><u>Do Homework for this week as listed on the Course Web-site for each Chapter in the Assigned Textbook.</u></p>
<p>Class Date: Week 5: 05 August 2014 Chapter 5: <i>Host, Application and Data Security</i></p>	<p>Homework Due Date: <u>By the end of the next week</u></p>
<p>In Class Activities</p> <p><u>Do all of the Hands-on Labs in this week's chapters.</u></p> <p><u>Do the quiz and the discussion forum posted on the Course Web-site for this week.</u></p> <p><u>Document and record all work with appropriate screenshots (Using Greenshot screen-capture software; or the Snagit feature in Windows 7) and clear, concise, and understandable wording. Complete these assignments in a tutorial type format as if you were explaining the materials to someone who was unfamiliar with the information.</u></p>	<p>Homework</p> <p><u>Do Homework for this week as listed on the Course Web-site for each Chapter in the Assigned Textbook.</u></p>
<p>Class Date: Week 6: 12 August 2014 Chapter 6: <i>Network Security</i></p>	<p>Homework Due Date: <u>By the end of the next week</u></p>

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<p>In Class Activities</p> <p><u>Do all of the Hands-on Labs in this week's chapters.</u></p> <p><u>Do the quiz and the discussion forum posted on the Course Web-site for this week.</u></p> <p><u>Document and record all work with appropriate screenshots (Using Greenshot screen-capture software; or the Snagit feature in Windows 7) and clear, concise, and understandable wording. Complete these assignments in a tutorial type format as if you were explaining the materials to someone who was unfamiliar with the information.</u></p>	<p>Homework</p> <p><u>Do Homework for this week as listed on the Course Web-site for each Chapter in the Assigned Textbook.</u></p>
<p>Class Date: <u>Week 6: 12 August 2014</u> Chapter 7: <i>Administering a Secure Network</i></p>	<p>Homework Due Date: <u>By the end of the next week</u></p>
<p>In Class Activities</p> <p><u>Do all of the Hands-on Labs in this week's chapters.</u></p> <p><u>Do the quiz and the discussion forum posted on the Course Web-site for this week.</u></p> <p><u>Document and record all work with appropriate screenshots (Using Greenshot screen-capture software; or the Snagit feature in Windows 7) and clear, concise, and understandable wording. Complete these assignments in a tutorial type format as if you were explaining the materials to someone who was unfamiliar with the information.</u></p>	<p>Homework</p> <p><u>Do Homework for this week as listed on the Course Web-site for each Chapter in the Assigned Textbook.</u></p>
<p>Class Date: <u>Week 7: 19 August 2014</u> Chapter 8: <i>Wireless Network Security</i></p>	<p>Homework Due Date: <u>By the end of the next week</u></p>

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<p>In Class Activities</p> <p><u>Do all of the Hands-on Labs in this week's chapters.</u></p> <p><u>Do the quiz and the discussion forum posted on the Course Web-site for this week.</u></p> <p><u>Document and record all work with appropriate screenshots (Using Greenshot screen-capture software; or the Snagit feature in Windows 7) and clear, concise, and understandable wording. Complete these assignments in a tutorial type format as if you were explaining the materials to someone who was unfamiliar with the information.</u></p>	<p>Homework</p> <p><u>Do Homework for this week as listed on the Course Web-site for each Chapter in the Assigned Textbook.</u></p>
<p>Class Date: Week 7: 19 August 2014 Chapter 9: Access Control Fundamentals</p>	<p>Homework Due Date: By the end of the next week</p>
<p>In Class Activities</p> <p><u>Do all of the Hands-on Labs in this week's chapters.</u></p> <p><u>Do the quiz and the discussion forum posted on the Course Web-site for this week.</u></p> <p><u>Document and record all work with appropriate screenshots (Using Greenshot screen-capture software; or the Snagit feature in Windows 7) and clear, concise, and understandable wording. Complete these assignments in a tutorial type format as if you were explaining the materials to someone who was unfamiliar with the information.</u></p>	<p>Homework</p> <p><u>Do Homework for this week as listed on the Course Web-site for each Chapter in the Assigned Textbook.</u></p>
<p>Class Date: Week 8: 26 August 2014 Chapter 10: Authentication and Account</p>	<p>Homework Due Date: By the end of the next week</p>

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Management	
In Class Activities	Homework
<p><u>Do all of the Hands-on Labs in this week's chapters.</u></p> <p><u>Do the quiz and the discussion forum posted on the Course Web-site for this week.</u></p> <p><u>Document and record all work with appropriate screenshots (Using Greenshot screen-capture software; or the Snagit feature in Windows 7) and clear, concise, and understandable wording. Complete these assignments in a tutorial type format as if you were explaining the materials to someone who was unfamiliar with the information.</u></p>	<p><u>Do Homework for this week as listed on the Course Web-site for each Chapter in the Assigned Textbook.</u></p>
Class Date: Week 8: 26 August 2014 Chapter 11: Basic Cryptography	Homework Due Date: By the end of the next week
In Class Activities	Homework
<p><u>Do all of the Hands-on Labs in this week's chapters.</u></p> <p><u>Do the quiz and the discussion forum posted on the Course Web-site for this week.</u></p> <p><u>Document and record all work with appropriate screenshots (Using Greenshot screen-capture software; or the Snagit feature in Windows 7) and clear, concise, and understandable wording. Complete these assignments in a tutorial type format as if you were explaining the materials to someone who was unfamiliar with the information.</u></p>	<p><u>Do Homework for this week as listed on the Course Web-site for each Chapter in the Assigned Textbook.</u></p>
Class Date: Week 9: 02 September 2014	Homework Due Date: By the end of the next

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Chapter 12: <i>Advanced Cryptography</i>	week
In Class Activities	Homework
<p><u>Do all of the Hands-on Labs in this week's chapters.</u></p> <p><u>Do the quiz and the discussion forum posted on the Course Web-site for this week.</u></p> <p><u>Document and record all work with appropriate screenshots (Using Greenshot screen-capture software; or the Snagit feature in Windows 7) and clear, concise, and understandable wording. Complete these assignments in a tutorial type format as if you were explaining the materials to someone who was unfamiliar with the information.</u></p>	<p><u>Do Homework for this week as listed on the Course Web-site for each Chapter in the Assigned Textbook.</u></p>
Class Date: Week 9: 02 September 2014 Chapter 13: <i>Business Continuity</i>	Homework Due Date: ____
In Class Activities	Homework
<p><u>Do all of the Hands-on Labs in this week's chapters.</u></p> <p><u>Do the quiz and the discussion forum posted on the Course Web-site for this week.</u></p> <p><u>Document and record all work with appropriate screenshots (Using Greenshot screen-capture software; or the Snagit feature in Windows 7) and clear, concise, and understandable wording. Complete these assignments in a tutorial type format as if you were explaining the materials to someone who was unfamiliar with the information.</u></p>	<p><u>Do Homework for this week as listed on the Course Web-site for each Chapter in the Assigned Textbook</u></p>
Class Date: Week 9: 02 September 2014	Homework Due Date: ____

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Chapter 14: <i>What Risk and Risk Mitigation are</i>	
In Class Activities	Homework
<u>Do all of the Hands-on Labs in this week's chapters.</u>	<u>Do Homework for this week as listed on the Course Web-site for each Chapter in the Assigned</u>
<u>Do the quiz and the discussion forum posted on the Course Web-site for this week.</u>	<u>Textbook</u>
<u>Document and record all work with appropriate screenshots (Using Greenshot screen-capture software; or the Snagit feature in Windows 7) and clear, concise, and understandable wording. Complete these assignments in a tutorial type format as if you were explaining the materials to someone who was unfamiliar with the information.</u>	

This course has an in-class final exam. Final exam date: 10 September 2014

Additional Final Exam Information:

Method of Instruction

Instructional techniques must be appropriate, and at a collegiate level, to the specific goals and objectives cited above. Students and instructors must have a clear understanding of the goals and time requirements of this course, the nature of the course context, and method of evaluation.

This course has two distinct but related instructional phases. The first component constitutes a minimum of 27.5 direct faculty instruction hours. This component is the lecture series and provides instruction in theory, principles or practices of the course. The second component constitutes a maximum of 27.5 appropriate classroom activity hours. This component is the skill development phase of the course and provides students the opportunity to apply knowledge gained in the lecture series. Method of instruction must fulfill the intended learner outcomes and competencies stated in the course goals and objectives and are appropriate to the capabilities of the students. For career oriented courses, the instructor must demonstrate that an effective relationship exists between curricular content and current practices in the field.

Additional Class Notes

Go to <http://www.openeducation.org/moodle> to use the Web-Assisted site for this course. Quizzes and discussion forums will be completed on-line at this site. This site will have a detailed explanation of all of the course requirements, materials, readings, videos.

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